

WHAT IS CLAIMED IS:

1. A current drive system with high uniformity reference current, comprising:

a first current driver having a first reference current generator unit
5 and accordingly generates a first current mirror unit, wherein the first reference current generator unit generates a pre-stage reference current I_{ref} and a first reference current I_1 , where $I_1 = K_1 * I_{ref}$ and K_1 is a current regulating parameter of the first reference current generator unit, and the first current mirror unit receives the first reference current I_1 and
10 accordingly generates a second reference current $I_2 = K_2 * I_1$, where K_2 is a current copy parameter of the first current mirror unit; and

at least one second current driver having a second reference current generator unit to receive the second reference current I_2 and accordingly generate a third reference current $I_3 = K_3 * I_2$, where K_3 is a current
15 regulating parameter of the second reference current generator unit and $K_2 * K_3 = 1$.

2. The current driving system as claimed in claim 1, wherein the second current driver further includes a second current mirror unit to receive the third reference current I_3 and accordingly generate a fourth
20 reference current I_4 for inputting to a next current driver.

3. The current driving system as claimed in claim 1, wherein $K_1 = K_3$ and $K_1 * K_2 = 1$.

4. The current driving system as claimed in claim 1, wherein the first reference current generator unit is externally connected to a reference

resistor in order to generate the pre-stage reference current I_{ref} according to the reference resistor and a reference voltage.

5 5. The current driving system as claimed in claim 1, wherein the first current driver generates a first output current in accordance with the first reference current, and the second current driver generates a second output current to drive a flat panel display's panel in accordance with the second reference current.

10 6. The current driving system as claimed in claim 4, wherein the first reference current generator unit has an operating amplifier and a plurality of first transistors, and the operating amplifier has a first input terminal connected to the reference voltage and a second input terminal connected to the reference resistor, thereby generating the pre-stage reference current I_{ref} .

15 7. The current driving system as claimed in claim 6, wherein the first transistors are P-type metal oxide semiconductor field effect transistors (PMOSFETs).

 8. The current driving system as claimed in claim 6, wherein the first transistors are N-type metal oxide semiconductor field effect transistors (NMOSFETs).

20 9. The current driving system as claimed in claim 1, wherein the first current mirror unit has a plurality of second transistors to form a current mirror circuit.

 10. The current driving system as claimed in claim 9, wherein the second transistors are NMOSFETs.

11. The current driving system as claimed in claim 9, wherein the second transistors are PMOSFETs.

12. A current driver for cascading at least one next current driver to thus form a current drive system which provides an output current to drive a display panel, the current driver comprising:

a reference current generator unit, which generates a pre-stage reference current I_{ref} and accordingly generates a first reference current $I1 = K1 * I_{ref}$, where $K1$ is a current regulating parameter of the first reference current generator unit; and

10 a current mirror unit, which receives the first reference current $I1$ and accordingly generates a second reference current $I2 = K2 * I1$, wherein $K2$ is a current copy parameter of the first current mirror unit, and the second reference current $I2$ is inputted to a next current driver, such that a third reference current $I3 = K3 * I2$ is generated by a reference current generator unit of the next current driver, where $K3$ is a current regulating parameter of the reference current generator unit of the next current driver and $K2 * K3 = 1$.

13. The current driver as claimed in claim 12, wherein the reference current generator unit is externally connected to a reference resistor in order to generate the pre-stage reference current I_{ref} according to the reference resistor and a reference voltage.

14. The current driver as claimed in claim 12, wherein $K1 = K3$ and $K1 * K2 = 1$.

15. The current driver as claimed in claim 13, wherein the reference

current generator unit has an operating amplifier and a plurality of first transistors, and the operating amplifier has a first input terminal connected to the reference voltage and a second input terminal connected to the reference resistor, thereby generating the previous stage reference current

5 Iref.

16. The current driver as claimed in claim 15, wherein the first transistors are P-type metal oxide semiconductor field effect transistors (PMOSFETs).

10 17. The current driver as claimed in claim 15, wherein the first transistors is N-type metal oxide semiconductor field effect transistors (NMOSFETs).

18. The current driver as claimed in claim 12, wherein the current mirror unit has a plurality of second transistors to form a current mirror circuit.

15 19. The current driver as claimed in claim 18, wherein the second transistors are NMOSFETs.

20. The current driver as claimed in claim 18, wherein the second transistors are PMOSFETs.